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**FCC MAIL ROOM**

October 1, 1998

The Federal Communications Commission  
1919 M St., N.W., Room 222  
Washington, D. C. 20554

Re: WT Docket No. 98-143  
Restructuring of Amateur Services Rules

In the matter of the 1998 Biennial Regulatory Review amendment to Part 97 of the Commission's Amateur Service Rules, FCC WT Docket 98-143, I hereby submit this paper in regard to the restructuring of the Amateur Radio Services

### Introduction

I have been a licensed amateur radio operator in Michigan since 1954, first licensed as W8ROF. I am a high school teacher who has been heavily involved in volunteer amateur radio recruitment, training and examination since the 1960s. I started this process when licensed amateurs were able to administer the Novice exam, assisting the FCC by reducing the burden of administering this entry level exam. (This was before the days of the official VEC program). As an employee of the Rochester Community Schools, Heathkit Electronic Center, Northwestern Michigan College, and Boyne City High School, I have helped hundreds of amateurs get their licenses throughout the years. My ability to get an education through college was greatly enhanced by my knowledge of electronics and amateur radio by working in electronics stores near Wayne State University in Detroit. Also, I became a missile technician at Chrysler Missile solely because of my knowledge of electronics gained through my experiences in amateur radio. While visiting an electronics store near Redford High School on the northwest side of Detroit when I was 13 years old, I saw a statement on the cover of an ARRL publication that said, "Amateur Radio - The Hobby With a Future". I believed those words then, and I still believe them to this day.

The comments that I make in this paper will specifically pertain to: 1) license class structure, 2) recruiters, instructor and VECs, 3) Morse code application, and 4) operator privileges. The final section of the paper will deal with suggestions, recommendations and proposals in the pursuit of a fair and equitable restructuring of the Amateur Radio Services.

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## **License Class Structure**

The current number of amateur license classes served a purpose in amateur radio for the process of incentive licensing. I believe it was a goal both by the FCC, ARRL, and others to have amateurs upgrade and work their way through the classes, going as high as they could. At one time, the Novice Class license was truly an entry level exam that allowed many people interested in the amateur services a door of opportunity. If the FCC believes, like the ARRL, that the foundation of amateur radio needs to appeal to young people getting into the hobby, then we do need a Novice style license. If we look back to the ARRL license manuals of the past, we see that the numbers of sample questions (question pool) has increased an inordinate amount over the years. (The current number is a whopping 486 sample questions for a 30 question exam). This is especially true since the implementation of the renewable Novice license.

I feel that the examples the FCC cites regarding the numbers in the Novice Class and use of their HF privileges is misleading. First, Novice class privileges are shared by Technician Plus Class licensees in the HF portion of those bands assigned to the Novice. (In essence, the Technician Plus is a Novice and Technician at the same time). If you add the numbers of both classes who share these HF privileges, (79,965 Novices + 147,559 Technician Plus) you have a combined total in both classes of 227,524 amateurs sharing those specific portions of the HF spectrum. As an example of licensee desires, I often have students who take both exams because they want combined HF and VHF/UHF operator privileges (six students within the past few months).

The Novice Class license has gotten out of control as an entry level exam because of the large numbers of questions that a potential licensee must study. My students do not leave the study group because of the Morse code, but more because of the excessive numbers of sample questions with which they must deal. If we intend by our actions to get youth into the amateur services, we need to target an exam that gears itself to youngsters between the ages of 12 -15 years of age. This is a time frame when students are eager to learn and do not have too many additional curricular and extra-curricular responsibilities distracting them. However, I believe that the Novice Class, if retained, should not be a renewable class license but should have term limits set in place that encourage the licensee to upgrade. I feel that without a Novice style license in the license structure we discriminate against young people entering the hobby. Also, with a term limited entry-level examination we would not need a Technician Plus Class license, and that could be phased out. Many countries of the world have a license similar to the Novice Class license in their licensing structure.

## **Recruiters, Instructors, and VECs**

In the FCC's document (98-143) there is a concern voiced for the VEC. However, the Commission totally neglects to mention a whole volunteer army who get our citizens interested in amateur radio, demonstrate its capabilities, recruit potential members, and above all... train them. Long before the examinee goes before the VEC group, they see amateur radio demonstrated in schools, Scout meetings, 4-H Clubs, public events, and during emergency disaster situations. As an example, during my school day, there is an hour called Extended Opportunities (EO). Students who are interested in a particular

extra-curricular activity are able to go to classrooms where an instructor shares a hobby or interest. Many students visit my classroom where I have an amateur radio station on display. It is there that I demonstrate the hobby and talk about its potential application. Students listen to amateur radio operators from around the world, talk, and make friends. In some cases, the foreign language classes come to visit and expand upon what they learn in the classroom. Demonstrating the hobby is my "hook" at getting students interested in my after school amateur radio class. I have done this now for 30 years.

In this after school amateur radio class, all of my time is volunteered. In essence, many entering this hobby do it as a result of programs like mine where teachers, amateur radio club members, organizations, and individuals donate their time to help others succeed in this wonderful hobby. Amateur radio then becomes the "spark" that helps individuals decide on a variety of career paths that are often influenced by this hobby. Recruiters and instructors are the "back-bone" of this hobby and are every bit as important as the Volunteer Examiners, and could play an important expanded role in entrance level licensing.

### **Morse Code Application**

While it is true that Morse code is only one of a number of modes by which amateur radio operators communicate, it is still the most dependable. RTTY, Packet, Facsimile and other digital modes require strong signals and a clear frequency for accurate detection. On the HF bands where conditions are totally affected by the sunspot cycle, these modes are far less dependable than Morse code and SSB voice communications. During weak signal detection and heavy fluctuations in band conditions, CW has been proven to be the superior method of communications. Other types of weak signal detection can only be accomplished using Morse code. These include

- Earth-Moon-Earth (Moonbounce) communications
- Aurora reflection
- Meteor shower communications

Besides SSB voice communications as the most used method of amateur radio communication, Morse code is still the second preferred mode of communication. Morse code also takes up less bandwidth than other modes of communication making better use of the RF spectrum, especially during crowded band conditions. The CW portions of the amateur frequencies see a heavy usage. Also, being a competent Morse code operator is a point of pride with many licensees. Because of these examples, I oppose any attempt by the FCC or others that would do away with Morse code as a method of communications or requirement for HF licensing on the amateur radio frequencies. The vast majority of amateur radio licensees (540,115) thought that it was important enough to take one or more Morse code exams.

As far as license structure relates to Morse code, I favor a three (3) step process of 5, 10, and 15 wpm. Depending on whether or not we continue to call the amateur radio licenses by their current names,

a 5 wpm code exam should be administered as the licensee desires to gain HF privileges. The goal of 10 wpm is below our General Class license and should be near an intermediate level. Lastly, 15 wpm should be attainable for those seeking the equivalent of the Amateur Extra Class exam. The reason for these speeds is that it has been proven that those studying Morse code have "blocks" in their abilities ..... 5 wpm is fairly easy to accomplish.....going beyond 10 wpm is more difficult and a "barrier" area. Once an amateur is experienced and gains in his/her abilities, 15 wpm is more easily attainable while 20 wpm is quite difficult. I think that these are reasonable speeds for upgrading and an incentive for a higher class of amateur operator privileges. (This attitude comes from someone who failed their first attempt at the Amateur Extra Class Morse code portion. It just made me try harder to upgrade).

### **Operator Privileges**

If the FCC proposal to do away with the Novice Class exam succeeds, I am highly in favor of an entry level class that includes some HF privileges. Let me explain my reasons. Since many entering the hobby through the Novice or Technician Plus (227, 524 licensees), desire to operate on some of the HF portions of the amateur bands, I feel that a Technician Class exam that allows only VHF/UHF privileges is highly discriminatory to those seeking HF interests. Also, it does not train those that would like to continue their journey in amateur radio by upgrading their licenses to include the privileges that a higher class license affords in the HF spectrum. Entry through a Novice/Technician Plus door did help to qualify those that desired to continue up the ladder of incentive licensing. If the Novice Class license is to be phased out, then it should be melded with the current Technician Class to allow some HF operation

FCC document #98-143 states that Technicians use FM voice and digital packet technology on VHF and UHF for operating modes. Is that our goal for the next generation radio amateur? By making the Technician Class the entry-level exam, I question whether an emphasis on FM voice and packet technology will continue to expand the FCC's goals to: advance radio technology, increase the number of trained technicians and electronic experts, enhance international goodwill, and improve operator skills. I think not! It does not take much skill to talk into a FM transceiver or operate packet radio, let alone encourage creative thinking. Any citizen who uses a cellular phone and can access the Internet is as technically competent. (My opposition to this rationale will be explained in further detail in my suggestions and recommendations section of this paper.)

The FCC proposal also states that the Novice portions of the bands see very little use and should be re-assigned to expand other operator class privileges. These comments reflect a time period when we have been at the bottom of a sunspot cycle. During these times, propagation conditions discourage operation on both the 15 meter and 10 meter bands. What's left for the Novice is the foreign broadcast infested section of 40 meters and high atmospheric noise on 80 meters - especially during spring, summer and early fall. I believe that is why so many Novices choose to upgrade to Technician Plus and have dual HF/VHF privileges. By the dual license process, they can operate where propagation is best. The bottom of a sunspot cycle is a poor time for analysis on spectrum usage and should not be used as the sole factor in eliminating the Novice Class license. (Remember, a full ¼ of the amateur radio

population (Novice/Technician Plus) have specific privileges in those sections of the amateur radio spectrum - 227,534 operators all together).

### **Suggestions, Recommendations, and Proposals**

This section will deal with two avenues of licensing: one that considers a 5 tier amateur radio license structure and the second that eliminates the Novice license and structures a 4 tier approach. For lack of better titles, let us call them by their current names as name changes are insignificant. First, let us consider the 5 tier approach

**Novice Class** - This first recommendation suggests keeping the Novice Class but with significant changes that do not affect a Technician No-Code Class license. This class would be one of two entry-level license classes. The exam questions would reflect HF operations only. No VHF privileges would be granted. A code speed of 5 wpm still would be required. The question pool would be minimal and geared toward 12 to 15 year old examinees. Operating privileges should be in a number of HF bands but only in the upper 25 Khz of an expanded General Class portion of the band or lower 25 Khz portion of the existing Novice bands. Novices would have a term limited license of 1 year or a maximum of two years at which time they would either forfeit their operator privileges or upgrade to a higher level. Power output would be restricted to the current 200 watts. Exams could be administered by a single Extra Class or Advanced Class operator thus taking the burden off the VEC and FCC. This class of operation would not discriminate against the operator desiring entry through a HF privileges door. It would encourage mentorships with other hams, groups of hams, or clubs. Incentive licensing would start at the Novice level.

**Technician No-Code Class** - This class would reflect the current No-Code Technician license as a second door of entry into the Amateur Radio Services. All privileges currently held by Technicians (No-Code) would remain in effect. The Technician would take an exam that would only reflect operator privileges and technical level questions specific to VHF/UHF operating, including all modes allowed on the Technician No-Code portions of the amateur radio spectrum. They would not have to take the newly suggested Novice class exam. However, Novices would have to take the Technician No-Code element of the exam structure to qualify for the next level of exams (General Class). Also, Novice Class licensees would relinquish their HF operating privileges if they decide to stop the incentive license process at this level.

**General Class** - The General Class license would reflect the current privileges specific to this class of license. However, a 5 wpm code exam would be administered to this class to allow the No-Code Technician an avenue of entry without the burden of the current 13 wpm code exam. It would also satisfy current international rules which specify competency in Morse code for HF operations. Those who enter through the Novice Class door would receive credit for passing the 5 wpm code exam taken at the time of their Novice Class exam. Privileges in this class would

include expansion into the current Novice portion of the spectrum with power restrictions currently in place lifted. This process would encourage Novices and Generals to communicate and help each other with the Morse code and other HF operating practices since they would be at the same proficiency level. (HF operating techniques differ from VHF/UHF operating techniques and need to be learned by the entering Technician). All Technicians who passed the written portion of the General Class exam prior to March 21, 1987 would automatically become General Class licensees. Those amateurs currently holding Technician Plus privileges would only have to take the written portion of the General Class exam since they previously passed a 5 wpm Morse code exam.

**Advanced Class** - This class of license would remain the same as the current Advanced Class license with the exception of an increase in Morse code to 10 wpm. (This would be 3 wpm lower than what the current Advanced Class amateur has passed). All operator privileges would remain the same as they are currently documented. Current General Class licensees would be given credit for the Morse code portion of this exam.

**Extra Class** - Since this is the highest level of amateur radio operation, it should be a "benchmark" in license structure - an **incentive** worth working toward. This class shouldn't be watered down to a point where it has very little significance in the Amateur Radio Services. The only change that I would suggest is a reduction in Morse code to 15 wpm. That would be only 2 wpm higher than the current 13 wpm required for General/Advanced Class amateurs. All operating privileges would remain the same as they are at this time. Extra Class amateurs should set an example for all other operators with the highest possible standards.

Since the FCC seems adamant about keeping the Novice Class license, a second avenue of licensing is suggested herein. This approach starts with the equivalent of the Technician Class with the difference of melding it with the Novice Class for expanded opportunities in the HF region. It is my belief that a VHF/UHF only entry level is counter productive to the Amateur Radio Services. First, VHF/UHF operation only discriminates against licensees in rural areas of America. The lack of VHF/UHF activity in rural areas would tend to discourage operators from further incentive licensing. Equipment for the VHF/UHF region is expensive and difficult to build for the inexperienced amateur radio operator. By contrast, there are a number of kits created for the HF region that encourage experimentation and building. My classes build code practice oscillators, receivers and transmitter kits. Also, I assist in establishing contacts for new operators by being present at a club station while they operate. This type of tutoring helps the new operator gain confidence as well as technical skills. I do not see this type of situation happening if the new licensee has VHF/UHF privileges only. However, this class could have no-code entry and restriction to VHF/UHF for those choosing not to take the Morse code exam. The other three (3) classes - General, Advanced, and Extra - licenses would follow the above mentioned format with slight changes. These are my recommendations.

**Technician Class No-Code/Technician Telegraphy Endorsement** - This class of license would meld relevant questions of the operating procedures of the Novice Class with the current questions from the No-Code Technician Class exam. The purpose of this avenue would be to allow for both HF and VHF/UHF operations. If the current Novice Class is eliminated, portions of those frequency allocations could be extended to higher classes of licensees without their current restrictions. Or, they could be allocated for digital modes of communications. The No-Code Technician licensee would continue to have operating privileges in only the VHF/UHF portions of the RF spectrum currently allocated to this class. However, a licensee seeking experience in operating on HF frequencies would seek a 5 wpm Telegraphy Endorsement giving the operator limited HF privileges in the current or expanded CW portion of the General Class HF spectrum. Then, the No-Code Technician could gain entry to CW HF privileges simply by passing a 5 wpm code exam at a later date. The 5 wpm Telegraphy Endorsement would be credited toward the General Class exam. This process would encourage Technicians (Telegraphy Endorsement) and Generals to help each other upgrade in the incentive licensing process. All present Technician Plus amateurs would fall into this category. Existing Novice Class amateurs would be allowed CW privileges in this portion of the HF spectrum until their licenses expire where upon they must upgrade to a higher class license. By passing the written portion of the Technician Class license, they would retain all HF privileges allocated to those amateurs with a Telegraphy Endorsement plus gain Technician Class VHF/UHF privileges.

**General Class** - The General Class licensee would be required to pass an exam similar to that being given by VECs at this time. It is a given that persons seeking entry to any higher level must pass the previous class element of examination. Expansion of the current Novice RF spectrum would be possible without the restrictions currently imposed therein. A 5 wpm Morse code exam would be given to this class examinee. However, Technicians with a Telegraphy Endorsement and existing Novices would be given credit for passing the 5 wpm requirement. This decrease would be 8 wpm lower than the current General Class license Morse code stipulation and should be easily attainable for new examinees. Furthermore, Technicians who passed the written portion of the General Class exam prior to March 21, 1987 would automatically qualify for the new General Class license.

**Advanced Class** - The Advanced Class examinee would be required to pass a written exam similar to the one currently being given. All operator privileges allocated to this class would remain intact. However, as part of this exam a 10 wpm Morse code exam would be administered. This would be 3 wpm lower than the Morse code exam being given to present General Class licensees. All current General Class licensees would be given credit for the Morse code portion of the exam. Shifting of the privileges could be implemented that would allow the Advanced Class amateur some increase in the CW RF spectrum as an incentive. Expanded opportunities should be given to this class operator in the VEC program.

**Extra Class** - In this second proposal with a four (4) license class tier, the Extra Class licensee would be given all additional privileges currently allotted to the highest class in the Amateur Radio Services. A reduction of 5 wpm Morse code would take place making that portion of the test 15 wpm. That would place the Morse code speed only 2 wpm above the current General

Class licensee. Incentive licensing would remain intact by retaining high expectations for this class of license.

Discrimination against handicapped individuals who cannot participate in the Morse code aspect of the hobby should not exist and the Morse code portion of any exam should be omitted for those persons wishing to pursue a higher class license.

In all cases, for each class of license, the exam question pool should be re-evaluated to determine whether the numbers of questions contribute to more competent amateurs or only encourage those that are good at rote memorization. I believe that this method of examination is out of step with current philosophies in education that stress problem solving of concepts rather than the old methods of rote memorization. We really need to deal with the idea of "outcomes" and ask ourselves the question, "Is what we are doing getting us what we want"? If not, we need to change our philosophies. However, change for change sake without consideration for all of the facts is not necessarily good.

## **Conclusions**

FCC document 98-143 proposes changes to the Amateur Radio Services by dropping the Novice Class license and restructuring the licensing process by making a Technician Class style license the "entry-level" examination to these services. In this document, the FCC cites as its example the reduction in the numbers of licensees taking the Novice Class exam and the high numbers taking the Technician Class exam. In this paper, I disagreed with the FCC and their interpretation of the data. By the pure nature of the Novice Class license, it was meant as a license of transition to higher Amateur Radio Service licenses - an incentive first step in the licensing process. While there were 179,226 No-Code Technician Class licensees in December 1, 1997, there were 79,965 Novice Class licensees and 147,559 Technician Plus licensees for a total of 227,524 seeking "entry-level" Morse code HF operating privileges.

The number of licensees desiring HF Morse code operating privileges is an overwhelming majority. It was shown that as of December 1, 1997 there were 540,105 licensees who have taken one or more Morse code exams and feel that the mode is a significant factor in Amateur Radio Services communications. I feel that as a majority, those desires should be considered in a democratic approach to restructuring the Amateur Radio Services. Based on these facts, a restructuring of the Amateur Radio Service driven by a no-code faction is ethically wrong.

The recommendations and proposals leading to either a five (5) tier license structure or a four (4) tier license structure that I have put forth in this paper address all issues in a fair, equitable and democratic manner and discriminate against no particular license class. Also, these proposals do not discriminate against those wishing HF operating privileges at an "entry-level". By contrast, the FCC document 98-143 and the proposals being put forth by the ARRI where Technician Class amateurs communicate only by VHF/UHF methods discriminates against rural Americans who have lower population levels and less activity on those frequencies. This concept is counter productive to an incentive licensing



structure. Also, potential licensees living in areas where topography (high hills and mountains) restrict VHF/UHF propagation would be adversely affected and discriminated against by such an "entry-level" licensing structure. Again, the recommendations put forth in this paper deal with these issues so that the "outcomes" are fair to all potential licensees

The Amateur Radio Services throughout history have provided emergency communications during disasters and war, advanced radio (electronic) technology, enhanced international goodwill, and expanded the number of trained operators, technicians, and electronics experts. The licensing structure of the past has served this country well and provided the "outcomes" that were desired. With thoughtful restructuring, the Amateur Radio Services will serve our country in a significant way into the next century. It is with that wish that I respectfully submit this paper for serious consideration.

Sincerely

A handwritten signature in dark ink, appearing to read 'W. Ewald', with a long horizontal flourish extending to the right.

Walter L. Ewald - W8WA